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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,153

02/07/2006

Andrew Goldsmith

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03/02/2010

ROTHWELL, FIGG, ERNST & MANBECK, P.C.

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WASHINGTON, DC 20005

EXAMINER

PRYOR, ALTON NATHANIEL

ART UNIT

PAPER NUMBER

1616

NOTIFICATION DATE

DELIVERY MODE

03/02/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

Office Action Summary	Application No. 10/553,153	Applicant(s) GOLDSMITH, ANDREW	
	Examiner ALTON N. PRYOR	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15, 17-20, 22, 23 and 26-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 17-20, 22, 23, 26-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's arguments filed 1/6/10 have been fully considered but they are not persuasive. See discussion below. Previous rejections and other issues not discussed below are withdrawn

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15,17-20,22,23,26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koppenhagen et al (WO 0005951; 2/10/00), Benoff et al (USPN 5705174; 1/6/98) and Martin (EP 279068; 08/24/88). Koppenhagen teaches an aqueous (flowable) composition comprising pesticides such as herbicides, which control weed growth in plants. See abstract, page 1, 2nd paragraph, page 15, 1st full paragraph, page 6, 1st full paragraph. Koppenhagen teaches the encapsulated material comprising a surfactant. See page 6, 1st full paragraph. Koppenhagen teaches that the surface active (surfactant) can be any wide variety of compounds known to lower the surface tension of a fluid interface, including both nonionic and anionic surfactants. See page 17, 2nd full paragraph. Koppenhagen teaches the encapsulated material comprising inorganic compounds such as alkali hydroxides. See claim 35. Koppenhagen teaches the use of a resin of urea-formaldehyde polymer for encapsulating the herbicide. See page 16, 1st full paragraph – 3rd full paragraph. Koppenhagen teaches a capsule suspension

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containing two materials with one material being encapsulated and the other contained in the aqueous phase. See page 23, 1st paragraph, claims 1,29-32. Koppenhagen does not teach pendimethalin as the herbicide, the microencapsulation of pendimethalin using polyurea or polyurethane, the anionic oligmers or polymers recited in claims 15 and 22, the specified neutral surface-active boron containing compound (see claims 15 and 22) and the instant ratio of microencapsulated pendimethalin to non-encapsulated pendimethalin. However, Martin teaches that pendimethalin is a herbicides. Therefore it would have been obvious to one having ordinary skill in the art to make a flowable composition comprising both encapsulated and non-encapsulated pendimethalin. One would have been motivated to do this because Koppenhagen broadly teaches the making of an aqueous composition comprising both an encapsulated and non-encapsulated herbicide. Additional motivation would be the production of a composition that would have an immediate to longer effect on weed control in plants. With respect to the invention comprising the instant oligomers or polymers, the instant inorganic compounds (salts), and the instant boron-containing non-ionic surfactant, Koppenhagen suggests the use of a wide range of surface active agents including anionic and nonionic. Therefore it would have been obvious to one having ordinary skill in art to use the boron-containing surface active agent in Koppenhagen's invention. In addition, one would have been motivated to do this since Koppenhagen specifically discloses that a wide range of anionic and nonionic surface active agents can be used in the invention. Koppenhagen teaches the use of polymer shells comprising a polymer of urea and formaldehyde, and Benoff et al. teach that pendimethalin can be shelled by polyurea or

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polyurethane (column 3 line 34 – column 4 line 24). It would have been obvious to modify Koppenhagen's invention to employ the polyurea or polyurethane taught in Benoff et al for the purpose of encapsulating the pendimethalin (herbicide). One would have been motivated to do this in order to make Koppenhagen's invention comprising non-encapsulated and encapsulated pendimethalin wherein the encapsulated pendimethalin is done using polyurea or polyurethane. In addition, one would have been motivated to do this in order to make some of the pendimethalin released under a controlled pattern. In the absence of a showing that instant polymers (polyurea and polyurethane) provide unexpected results over Koppenhagen's polymer made from formaldehyde and urea, the Koppenhagen's polymeric material makes instant polymeric material (polyurea and polyurethane) obvious. Both the instant and prior art polymers serve the same purpose, i.e. for the controlled release of the active ingredient contained therein. With respect to the ratio and amounts / concentration of ingredients, one having ordinary skill in the art would have been motivated to determine the optimum amount of each ingredient of the instant invention. One would have been motivated to do in order to develop an invention that would have been effective at controlling weeds without destroying the desired plant. In the absence of unexpected results for the instant surfactants, Koppenhagen makes the instant surfactants obvious. Note Koppenhagen is open to a wide variety of anionic and nonionic surfactants including the instant surfactants absent a showing of the criticality of the instant surfactants.

Response to Applicants' Argument

Applicants argue that van Koppenhagen teaches aqueous compositions comprising pesticides that control weed growth. Martin discloses oil-in-water emulsion compositions containing pendimethalin. Benoff is drawn to a method for preparing microcapsule compositions. Applicants further argue that the cited references do not disclose that the claim element of microencapsulation of pendimethalin using polyurea or polyurethane. The Examiner argues that Van Koppenhagen is used to teach a capsule suspension containing two materials with one material being encapsulated and the other contained in the aqueous phase (page 23, 1st paragraph, claims 1,29-32). The material can be a herbicide according to van Koppenhagen (abstract, page 1, 2nd paragraph, page 15, 1st full paragraph, page 6, 1st full paragraph). As can be seen, van Koppenhagen is the foundation of the rejection. Martin is primarily used for the purpose of defining pendimethalin as a herbicide. Note, van Koppenhagen is open to inclusion herbicides therefore open to the inclusion of pendimethalin taught by Martin. Benoff is used to demonstrate that pendimethalin can be encapsulated using polyurea and polyurethane. Therefore at the time of the modified van Koppenhagen-Martin's invention, it would have been obvious encapsulate pendimethalin using polyurea or polyurethane.

Applicants argue that van Koppenhagen from page 23 makes it clear that the polymer wall in van Koppenhagen's microcapsules can be cleaved using base at a pH range of 8 – 10. On the other, Applicants argue that the polyamide or polyurea wall material in the microcapsule of the instant invention is water-insoluble and cannot be

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cleaved by the action of a base. Based on this teaching, Applicants argue that an artisan would not combine the teachings of Koppenhagen and Benoff. Further, Applicants argues that Benoff microcapsule is not cleavable by base, whereas Koppenhagen's microcapsules are cleavable by base. The Examiner argues that the urea-formaldehyde polymer in Koppenhagen is water insoluble according to the teaching in USPN 3737404. Based on this teaching it would have been obvious to replace urea-formaldehyde polymer with instant water-insoluble polymer. One would have been motivated to do this since water-insoluble polymers are expected to yield similar results when used in the same manner, absent a showing of unexpected results for one water-insoluble polymer over another. No pH limitation is in the independent claims; thus, no rebuttal is being made regarding pH. Further, Applicants at the start of the arguments above explained the reasoning for combining Koppenhagen, Martin and Benoff.

Applicants' argument focuses on the use of polyurea or polyurethane to encapsulate pendimethalin, whereas Koppenhagen et al. use an urea-formaldehyde polymer to encapsulate pendimethalin. To address this argument, the Examiner recites the new rejection above which adds the Benoff et al. patent to the Koppenhagen et al. and Martin reference combination. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Telephonic Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alton N. Pryor whose telephone number is 571-272-0621. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alton N. Pryor/
Primary Examiner, Art Unit 1616